WINDOWS & DOORS: THERMAL PERFORMANCE AND SUSTAINABILITY

- GLASS PERFORMANCE
- THERMAL VALUE OF FRAME
- LEED CREDIT CONTRIBUTION

Presented by:

TRACO™

The Windows And Doors That Greet The World

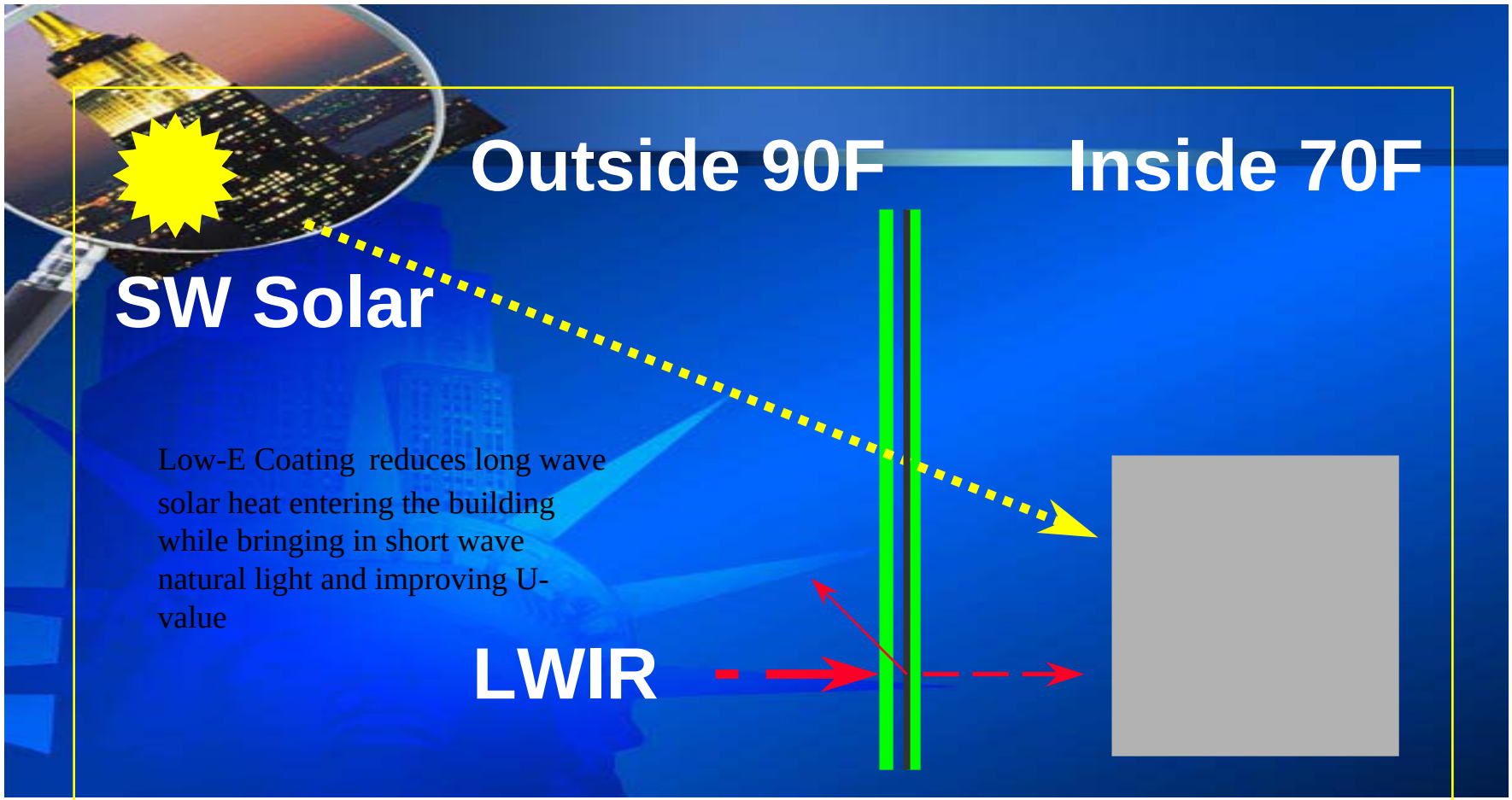
INSULATED GLASS

- A MUST for thermal efficiency!!
- Enhanced thermal performance
- High performance Low –E coatings further enhance performance
- Performance measured by U-value and SHGC

U-VALUE and SOLAR HEAT GAIN COEFFICIENT

- U-Value: A measure of thermal transfer through the glass and frame= TOTAL UNIT U-Value
- SHGC: A measure of solar heat transfer through the glass
- In both cases the LOWER the number, the higher the thermal performance

Low –E Coatings



High Performance Low-E

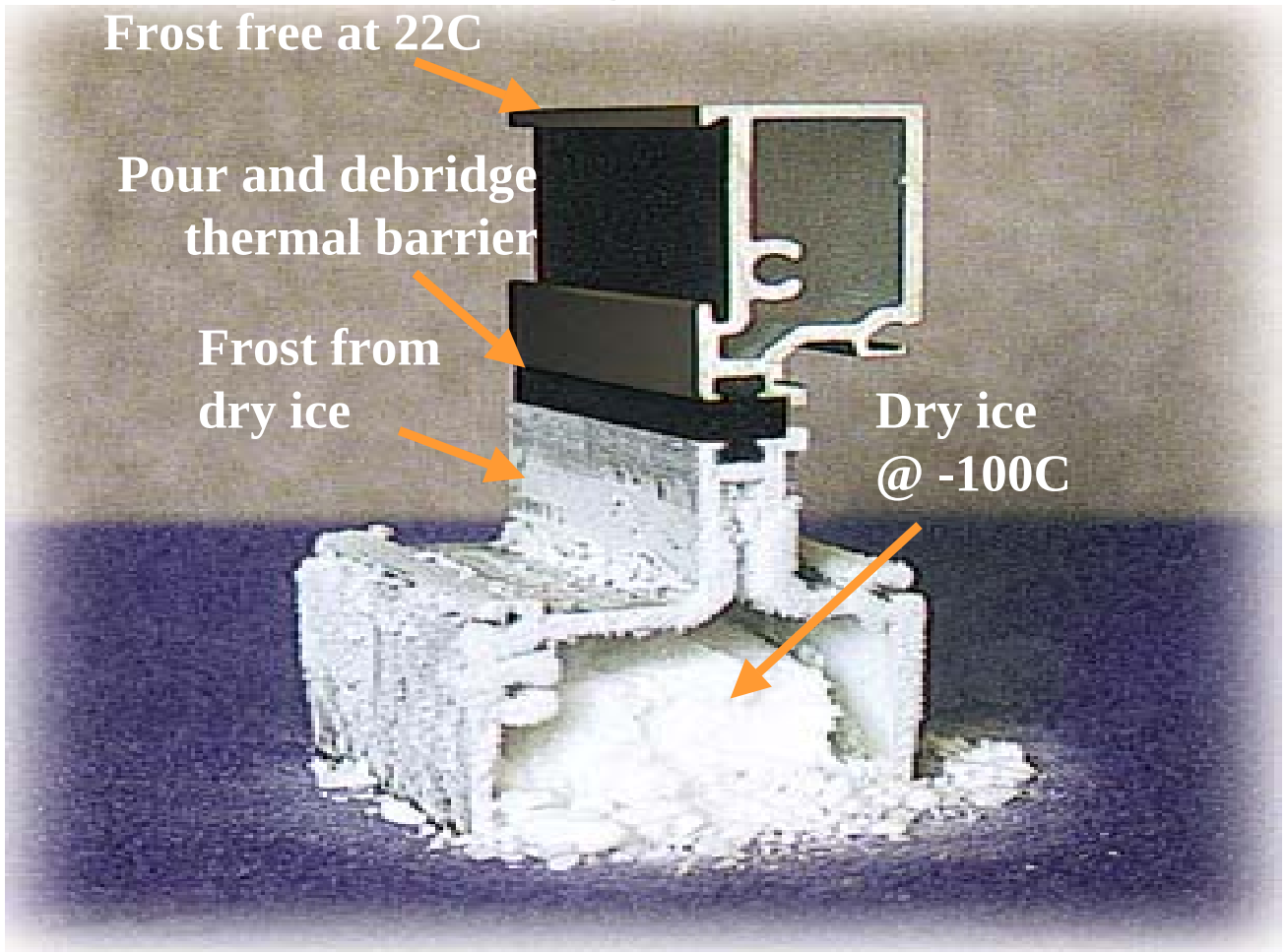
- Many glass manufacturers offering varying levels of performance and appearance;
- PPG
- AFG
- Viracon
- To name just a few…….

THERMALLY IMPROVED FRAMES

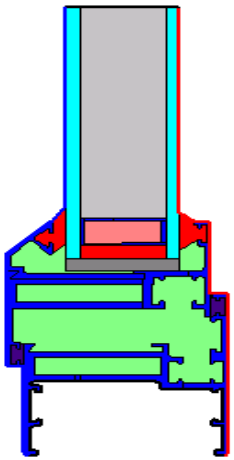
ALUMINUM :

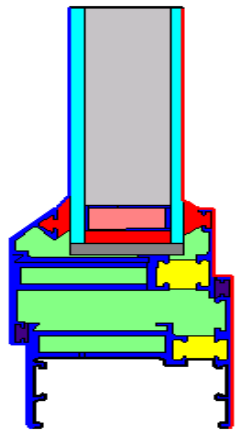
- Chosen for strength and durability in commercial applications
- Offers endless color options
- Aluminum frames MUST be thermally broken in order to meet energy requirements
- Contributes to “Green” aspect of construction

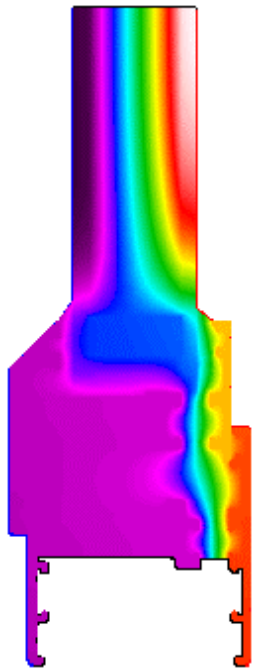
What does a thermal barrier system really do?



Infrared Heat Flow on a 1” clear IG with and without a thermal barrier framing system







Aluminum Windows and LEED

- Building PRODUCTS can contribute to LEED Rating System
- Building PRODUCTS cannot be LEED Certified
- Only Building PROJECTS can be LEED Certified

Aluminum Windows and LEED

- Recycled aluminum is created with 5% of the energy primary billet requires
- Aluminum windows typically manufactured with 25% recycled content, higher percentages can be utilized
- Flat glass is produced using 15-20% cullet
- Life Cycle Assessment is positive
  - Since 1886, 66% of 680m tons still in use

Aluminum Windows and LEED

- GLASS:
- Performance will directly impact building mechanical requirements and energy consumption
- Amount of glass will directly impact amount of natural light being brought in

Aluminum Windows and LEED

Thermal frames:

- Aluminum frames of all fenestration products should be thermally improved in order to meet energy performance requirements
- This includes Entrances, Storefronts, Curtainwall, Windows, and Skylights

Aluminum Windows and LEED

Recycled content:

- Percentage typically 25%, but can be higher
- Recycled material must be post-industrial to maintain quality
- High performance painted finish recommended

Aluminum Windows and LEED

INDOOR AIR QUALITY:

- Incorporating operable windows into the building design will contribute to indoor air quality

SUMMARY

All Fenestration Products should:

- Utilize high performance glazing
- Utilize thermally improved frames
- Be manufactured with minimum of 25% recycled content
- Be provided by a proven manufacturer with a successful commercial track record

THANK YOU FOR YOUR TIME!!

QUESTIONS?

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